Ship-2- Ship LNG bunkering and SIMOPS.

By. Operation Manager Christoffer Lillhage

2018-04-10
LNG bunkering Operational regulations in the Port of Gothenburg.

• Co-operation with Port of Rotterdam and Port of Gothenburg to develop operational regulations and concept started 2011.

• Port of Stockholm and Port of Gothenburg sharing experience during Viking grace Project.

• Port of Gothenburg LNG regulations was first published 2015-07-02
The project goal:

- Develop LNG bunkering operational regulations.

- Implement Green bunkering concept for LNG. Port of Gothenburg has a Green bunkering concept since 1999 in co-operation with the Swedish coast guard, Swedish transport agency and Swedish maritime administration.

- "Best practice" knowledge base. LNG Bunkering Ship to Ship is still something "new" and we can only become experts by sharing experience and best practice.
Guidelines

- IMO, Interim guidelines for LNG as fuel; MSC 285(86)
- ISO 20519:2017
- IGF code
- OCIMF
- Class society policy
- IAPH with LNG safety check list.
- SGMF
- Swedish Transport Agency
- Other Swedish public authorities
- EMSA
Content of LNG bunkering regulations

• Standard of bunker barge, receiving vessel and the terminal criterias.
• Specify safety zone and Security Zone
• Certain operational regulations
• Bunkering procedure
• Responsibility
• LNG Bunker checklist. Content 56 items. Splitted in 3 areas before, during and after operation
PORT AUTHORITY SAFETY SUPERVISION

- Establish a LNG-bunkering check list (Pre-During-After)
- Risk assessments demand Hazid/Hazop.
- LNG bunkering procedure and process from bunker barge as well as receiving vessel
- Nautical assessment
- Mooring arrangement demand
- Wind limitations (wave and current)
- Communication and alarm list
- Potential impacts on other terminal facilities
FOCUS AREAS DURING STS BUNKERING

• Maximum pressure and pumping rate
• PPE and work environment
• Safety measures
• Hose handling due to ship movements
• No simultaneous operations other than SIMOP cargo activities.
• ESD, Emergency shut down as standard
• Drip free break away coupling
• (ERS)
2017-09-03

First bunkering at anchorage and use of LNG bunker checklist.

Ternsund and Coral Energy.
First Ship to Ship LNG bunkering in the Energy Port.

Ternsund and Coralius.

2017-10-05
First SIMOP in the Energy Port.

MT Tern Ocean loading gasoil during LNG bunker operation.
LNG Bunkering and SIMOPS in the Port of Gothenburg to this date.

- Total 10 ship to ship LNG bunkering operations alongside at 4 different berths.
  Bunkering time 3 - 4 hours Volume 100-200MT

- 8 of 10 SIMOPS. Gasoil.

- (1 bunkering LNG truck to Ship)
Best practice and lessons learned

• Information exchange before bunker vessel go along side.

• Pre bunker meeting and completion of LNG checklist with involved parties.

• Port and terminal representatives onboard and active in the completion of the bunker checklist.
Challenges
How to effectively control movements in the security zone?
Opportunities ahead.

- LNG bunkering pipe to jetty.
- SIMOP during low flashpoint cargo operation.
- LNG full scale open access terminal.